### Mathematical Sciences MS – Graduate School

**Outcome** | **Assessment Method**  
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SLO1: (Mastery of Core Knowledge) Students will be able understand and employ the basic tools and methods of core graduate areas in their chosen concentration. Such tools and methods range from theoretical techniques to the construction of models and solution methods. In particular, students will be able to demonstrate mastery of Linear Algebra (both Concentrations), and of Analysis (Mathematics Concentration) or Statistics (Statistics Concentration).  
**Measure 1.1:** (Final Exam—Linear Algebra) The final exam of Math 502, Advanced Linear Algebra, will be used to assess the student's mastery of linear algebra. The student's performance on the final exam will be assessed by the Graduate Steering Committee according to scoring rubrics, including scores for individual questions as well as an overall score.  
**Performance Target:** It is expected that 75% of students will be rated acceptable (i.e. correctly answering at least 80% of the exam questions) or above on this category. Individual question scores will be used to identify any area in need of improvement.  
**Measure 1.2:** (Final Exam—Core Courses) The final exams of Math 511, Real Analysis I, or Math 515, Complex Analysis, will be used to assess the student's mastery of Analysis (Mathematics Concentration). The final exams of Math 530, Mathematical Statistics I, or Math 550, Linear Models, will be used to assess the student's mastery of Statistics (Statistics Concentration). The student's performance on the final exam will be assessed by the Graduate Steering Committee according to scoring rubrics, including scores for individual questions as well as an overall score.  
**Performance Target:** It is expected that 75% of students will be rated acceptable (i.e. correctly answering at least 80% of the exam questions) or above on this category. Individual question scores will be used to identify any area in need of improvement.  
**Measure 1.3:** (Student Progress Interview) The progress of each graduate student will be assessed (by the Program Director or Advisor) at the end of his/her first year.  
**Performance Target:** It is expected that at least 75% of students will have completed Math 511 (Mathematics Concentration) or Math 530 (Statistics Concentration) by the end of their first semester, at a level rated as acceptable for continuing in the program.  

SLO2: (Communicating Mathematics) Students will be able to communicate mathematical arguments, and present the results of a mathematical/statistical study in a clear, coherent, and convincing manner, both orally and in writing.  
**Measure 2.1:** (Oral Presentations) All thesis defenses, poster sessions and in-class oral presentations will be used to assess the graduate-level competence in communicating mathematics/statistics by the Graduate Steering Committee according to a scoring rubric.  
**Performance Target:** It is expected that 75% or higher will be judged to be of an acceptable level or better.  
**Measure 2.2:** (Projects) All major projects including theses, final class projects and reports, independent study projects or reports, internship or consulting projects, and seminar reports, will be collected at the end of each semester and used to assess the graduate-level competence in communicating mathematics/statistics by the Graduate Steering Committee according to a scoring rubric.  
**Performance Target:** It is expected that 70% of students will be rated acceptable or above on this category.
Mathematical Sciences MS – Graduate School

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<td>SLO3: (Independent Project) Students will be able to conduct supervised, independent projects in the mathematical sciences. In particular, students will be able to formulate, investigate and analyze either a theoretical question or a model of a phenomenon or of data, guided by prior research in theory and/or applications.</td>
<td><strong>Measure 3.1:</strong> (Projects) All major projects including Theses, final class projects and reports, Independent Study projects or reports, internship or consulting projects, and seminar reports, will be collected at the end of each semester and used to assess graduate-level proficiency in independent projects by the graduate steering committee according to a scoring rubric. <strong>Performance Target:</strong> It is expected that 70% of students will be rated acceptable or above on this category. <strong>Measure 3.2:</strong> (Post-graduation Survey) A post-graduation survey containing both direct and indirect questions measuring graduate-level proficiency in independent projects. The survey will be administered 3-to-6 months after graduation. Questions will be chosen specific to SLO3 and assessed by the Graduate Steering Committee (based on a scoring rubric). <strong>Performance Target:</strong> It is expected that 80% of the responding students report that they felt adequately prepared.</td>
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